ACCELERATED RENEWABLE ENERGY DEVELOPMENT

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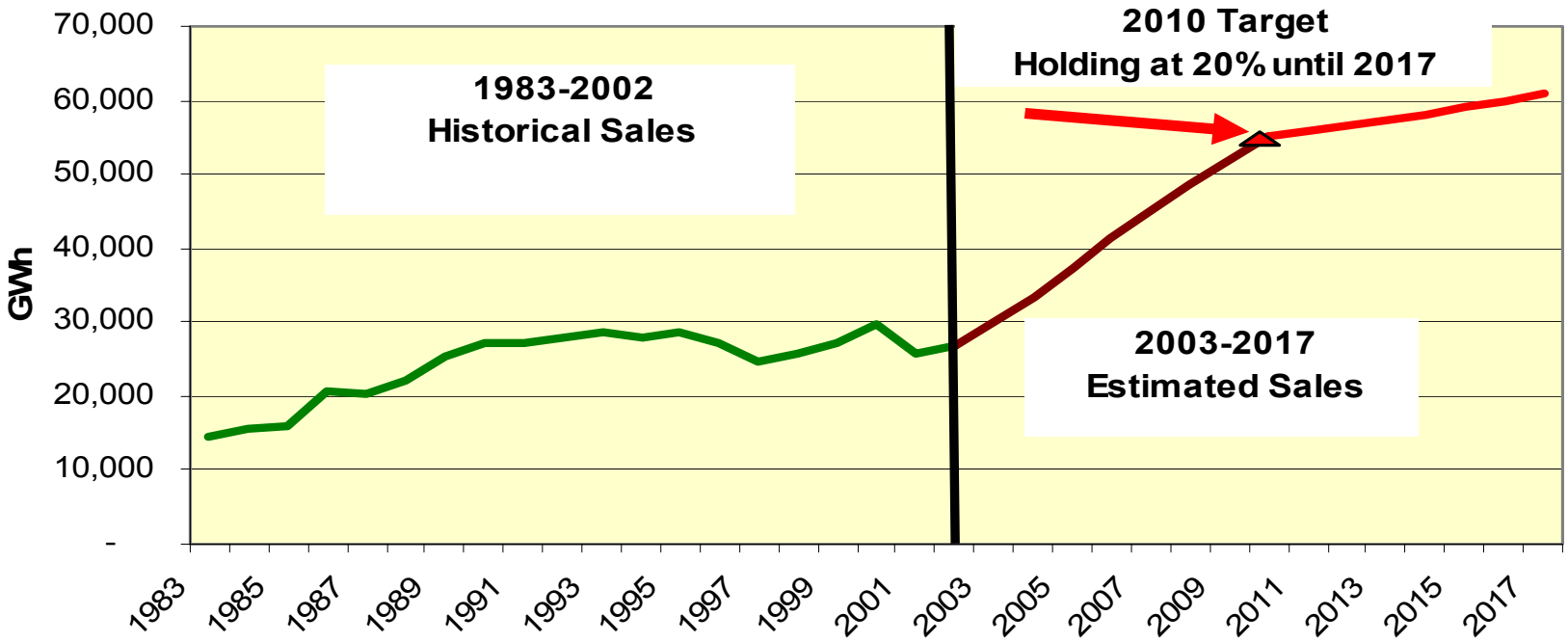
AGENDA

- Staff Presentation
- Other Presentations
- Accelerated Renewable Energy Development Roundtable Discussions
  - Goals Beyond 2010/Specific Utility Goals
  - Publicly-Owned Utilities
  - Renewable Energy Certificates
- Adjourn

Accelerated RPS Goals

- Gov. Schwarzenegger called for accelerating the RPS phase-in to 2010, rather than 2017.
- 2003 *Energy Action Plan* accelerated RPS goal to year 2010.
  - California Energy Commission
  - California Public Utilities Commission
  - California Power Authority
- 2003 *Integrated Energy Policy Report*
  - Underscored Energy Commission's support for accelerated goal
  - Recommended more ambitious, longer-term goal for post 2010

Historical and Estimated Renewables in California: The Effect of the RPS



Accelerated RPS Goals Beyond 2010

- Should we pursue additional renewables development beyond 2010?
- What are the benefits and barriers?
- How and when should the accelerated goals be accomplished?
- How to adjust goals due to transmission and resource availability and/or cost changes?

RPS Target and the Statewide Potential

55,170 GWh/yr

20% by 2010

262,150 GWh/yr*

Technical Potential

*Estimated potential for other WECC states is 3.7 million GWh/yr

Benefits and Barriers

- Benefits
  - Increased Diversity/Reduced Reliance on Natural Gas?
  - Environmental and Contribution to Climate Change Goals?
- Barriers
  - Transmission Siting and Cost?
  - Intermittency and Integration?
  - Resource Costs: Low-Hanging Fruit vs. Technology Advancement?

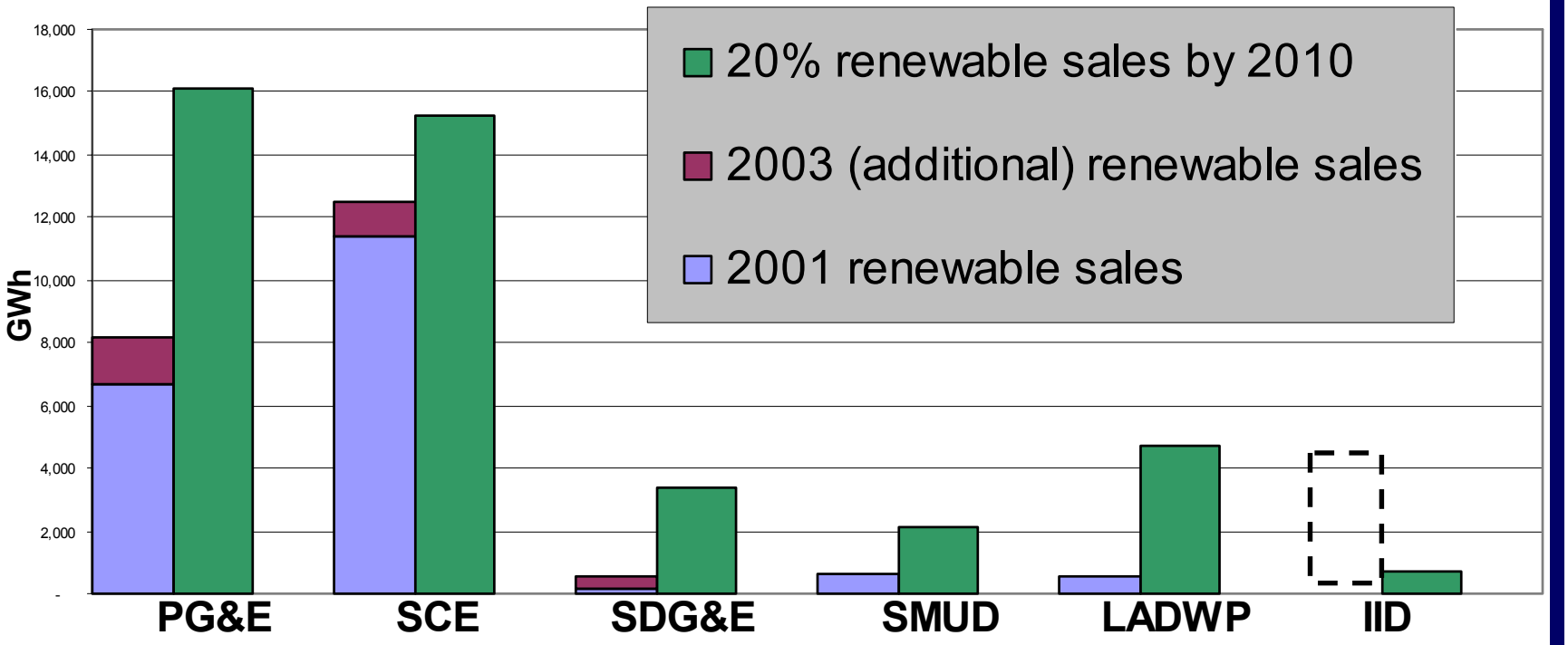
How And When Should The Accelerated Goals Be Accomplished?

- Example of When: 33% by 2020
- Examples of How:
  - Combination of Mandate/Incentive (current RPS)
  - Incentives Beyond Current Mandate
    - What are they?
    - How are they funded?
- Adjustments to Reflect Market Conditions
  - Legislative or Regulatory Flexibility

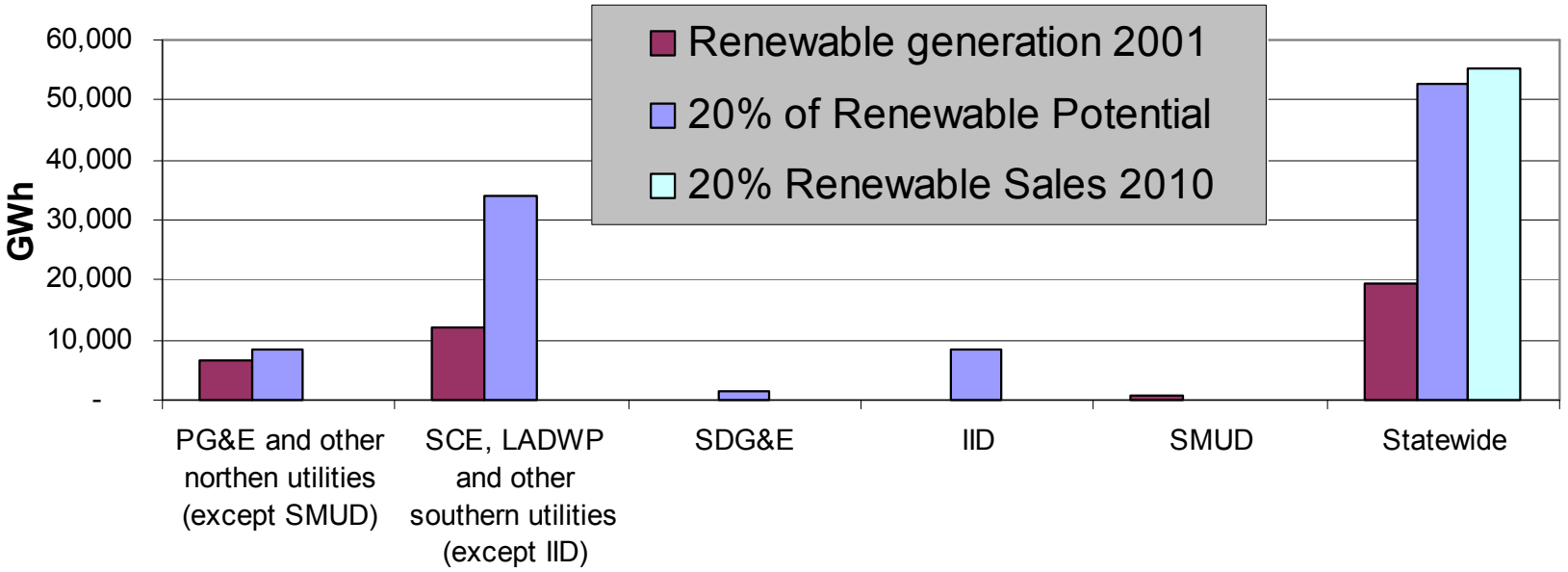
Re-Calibration of Utility Goals

- Should RPS targets differ by utility/seller or remain equal statewide?
- How to account for varying resources within each utility area?
- How to account for varying transmission infrastructure within and among utility areas?
- How to account for varying resource development costs?
- If we establish different targets, should we use mandates or incentives?

20% Renewable Sales by 2010



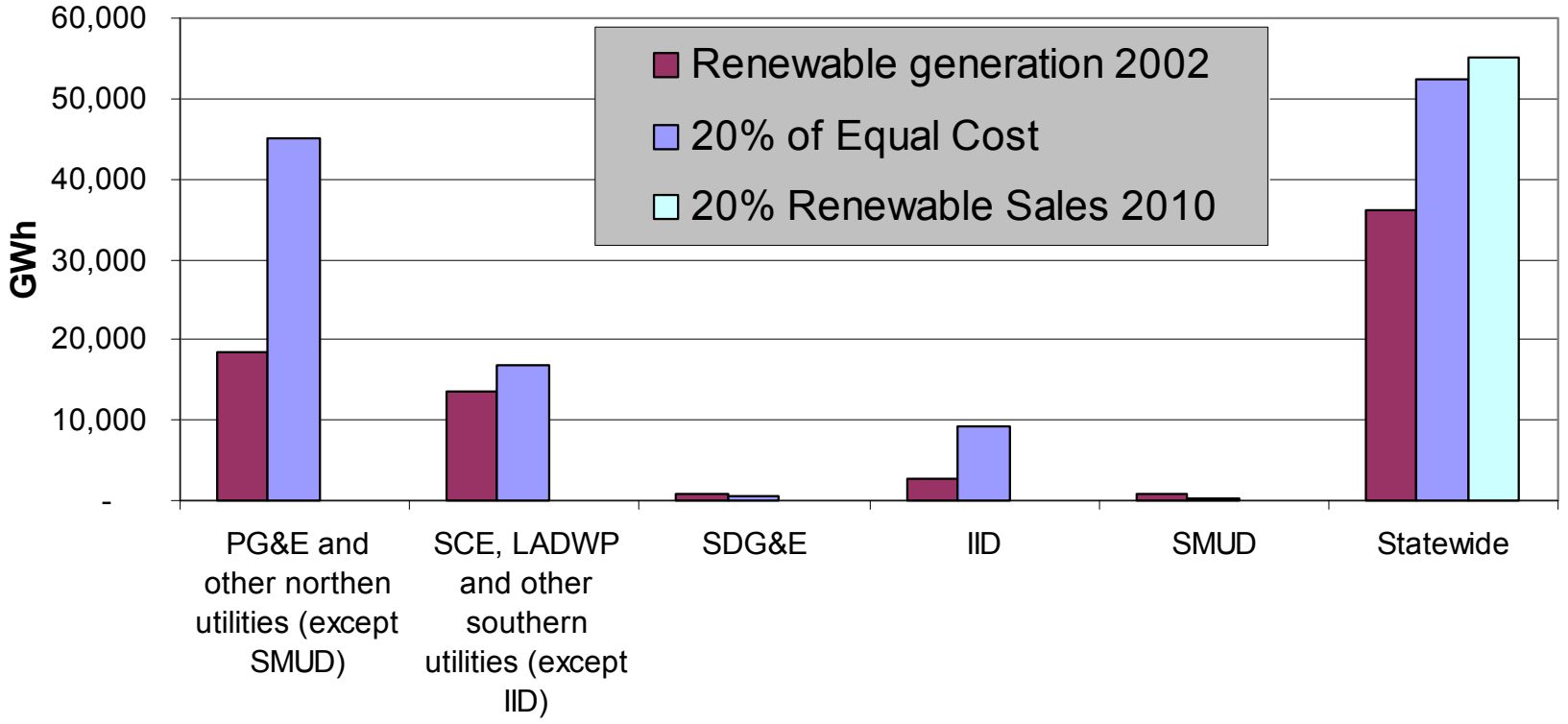
20% Renewable Potential by Location



Obligation as Percent of Potential: Issues

- Potential is Estimated, not Measured Like Retail Sales
  - Significant Changes Possible as Estimates are Updated and Technology Changes
    - E.g. – Low wind speed potential not included currently
  - Unclear When Obligation is Accomplished
- Relation to Out-of-State (or Service Area) Resources
    - If obligation is % of potential in service area, how are purchases from out of service area related?
- Resource Potential in Service Area may be High Cost Resources

20% of Equal Cost Burden?



20% of Equal Cost: Issues

- Fairly Complicated Analysis of Costs Implied
  - Differential Renewable Resource Cost per Service Area
  - Differential Benefits Per Service Area
  - Differential Conventional Power Costs per Service Area
  - Differential Rate Impacts per Service Area

AB 1890 – Publicly Owned Electric Utilities

- 385. (a) Each local publicly owned electric utility shall establish a nonbypassable, usage based charge…to fund…any or all…
- (1) energy-efficiency
- (2) renewable energy resources
- (3) Research and development
- (4) low-income

SB 1078 – Publicly Owned Electric Utilities

- 387. (a) Each governing body of a local publicly owned electric utility,…, shall be responsible for implementing and enforcing a renewables portfolio standard…
- (b) Each local publicly owned electric utility shall report…
- (1) Expenditures of public goods… for renewable energy

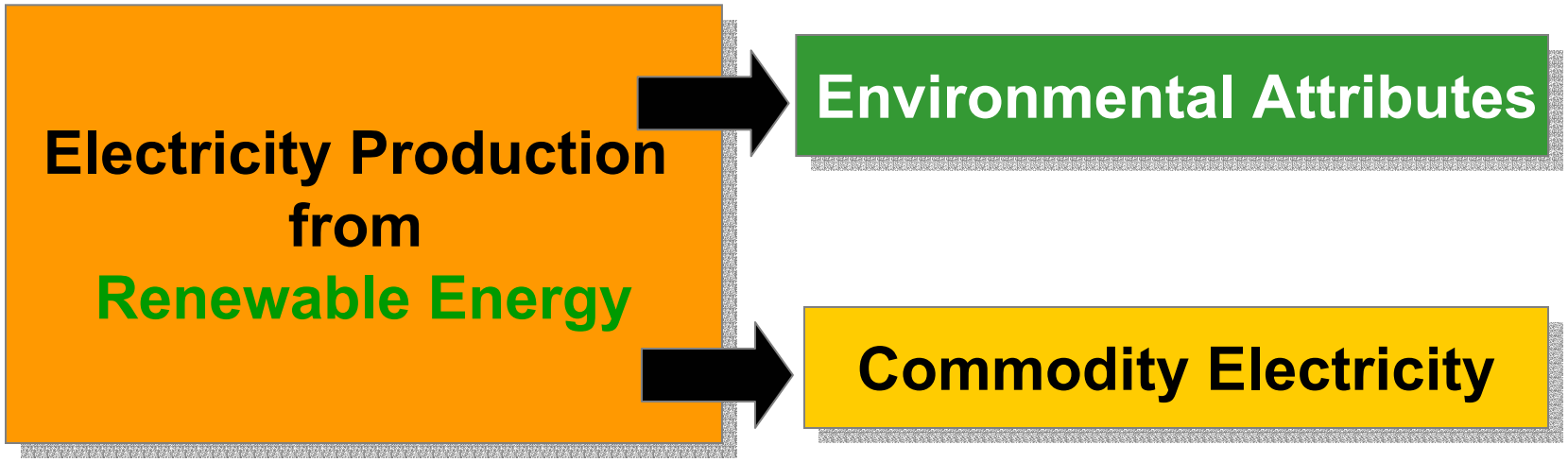
SB 1078 (continued)

- (2) The resource mix…by fuel type…with separate categories for those fuels considered eligible renewable energy resources as defined by Section 399.12.

Publicly-Owned Utilities and RPS

- What progress have POUs made in developing RPS plans?
- What implementation rules will POUs use?
- How to coordinate POU procurement and transmission planning with statewide goals?
- How to factor green-pricing programs?
- What are POU barriers for accelerated RPS targets beyond 2010? Beyond 20 percent?

What are Renewable Energy Certificates?



Electricity generated from **renewable energy** sources comprises two distinct tradable commodities – the electricity and the **"green"** attributes.

RECs in California

- Current RPS implementation rules require transactions to bundle energy and RECs
- CA RPS accounting system will use RECs for compliance purposes
  - Interim system, using Power Source Disclosure program forms as basis
  - Final electronic system will be REC-based accounting system (WREGIS)
- Voluntary REC market in California
  - City of Palo Alto Utilities Green Pricing Program
  - Lundberg Family Farms
  - REC marketers are selling CA RECs nation-wide

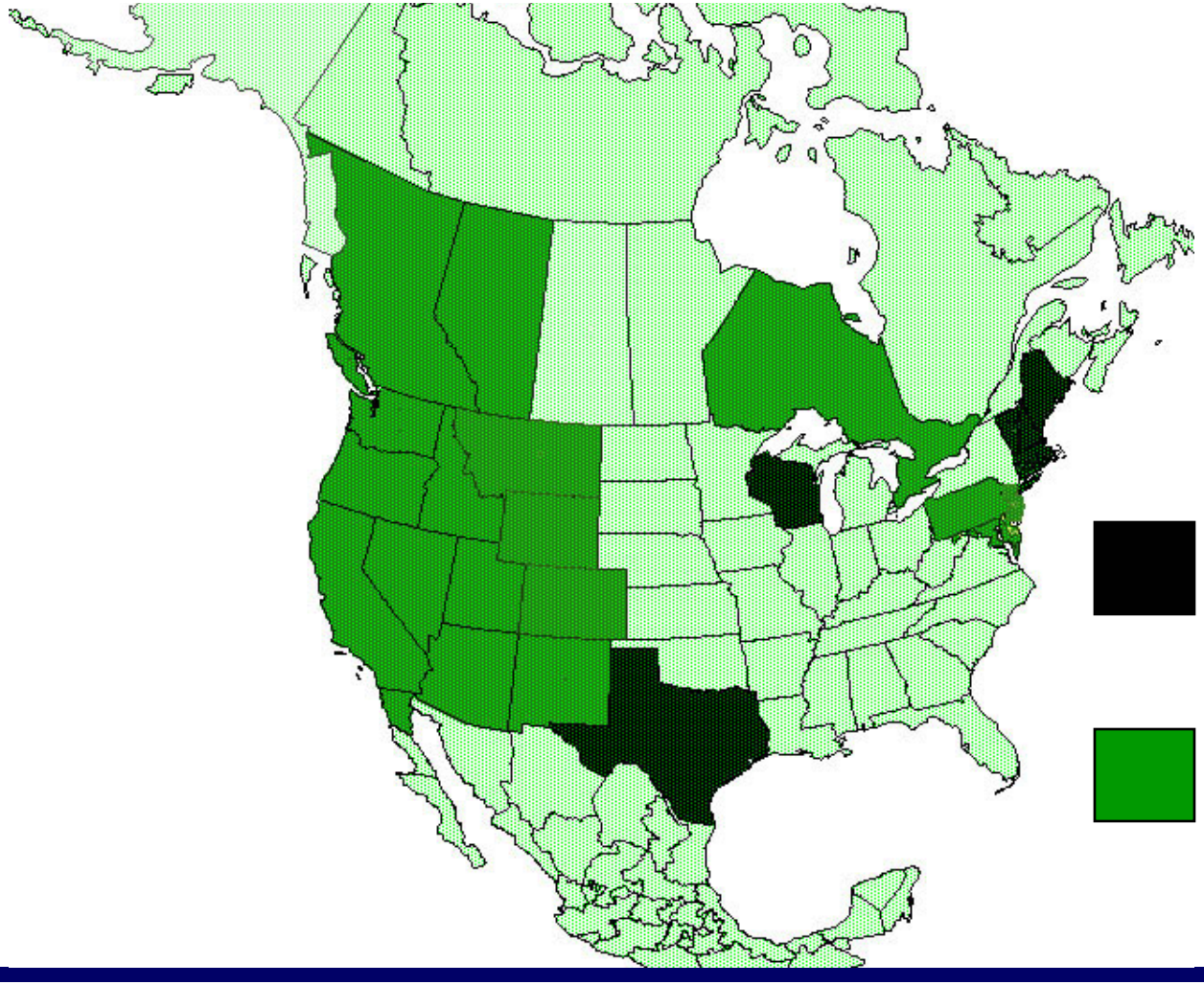
Why Tradeable RECs?

- Reduce Least Cost/Best Fit Concerns
  - Reduce transmission costs
  - Reduce re-marketing costs
- Implicit in Flexible Compliance
  - Banking is taking attribute and associating with next year's energy
- Facilitates Participation by Intermittent Resources

Issues With Tradeable RECs For RPS Compliance Purposes

- Relation to MPR Structure
  - What is MPR for a REC-only transaction?
  - RECs w/o long-term bundled energy ineligible for SEPs?
- PGC contribution
  - Who owns RECS: public, ratepayers, or private purchaser?
  - Is REC ownership split?

North American Certificate Tracking Systems



System In Operation

System In Discussion/ Under Development